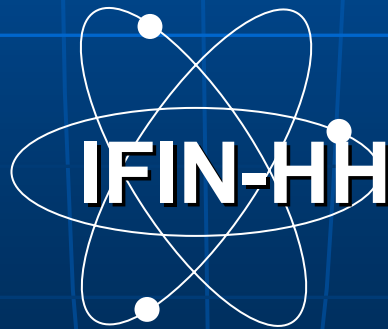
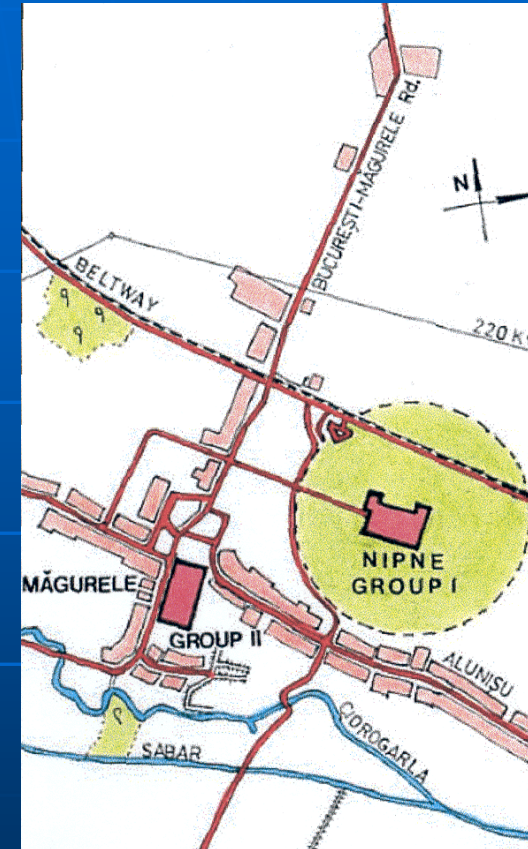
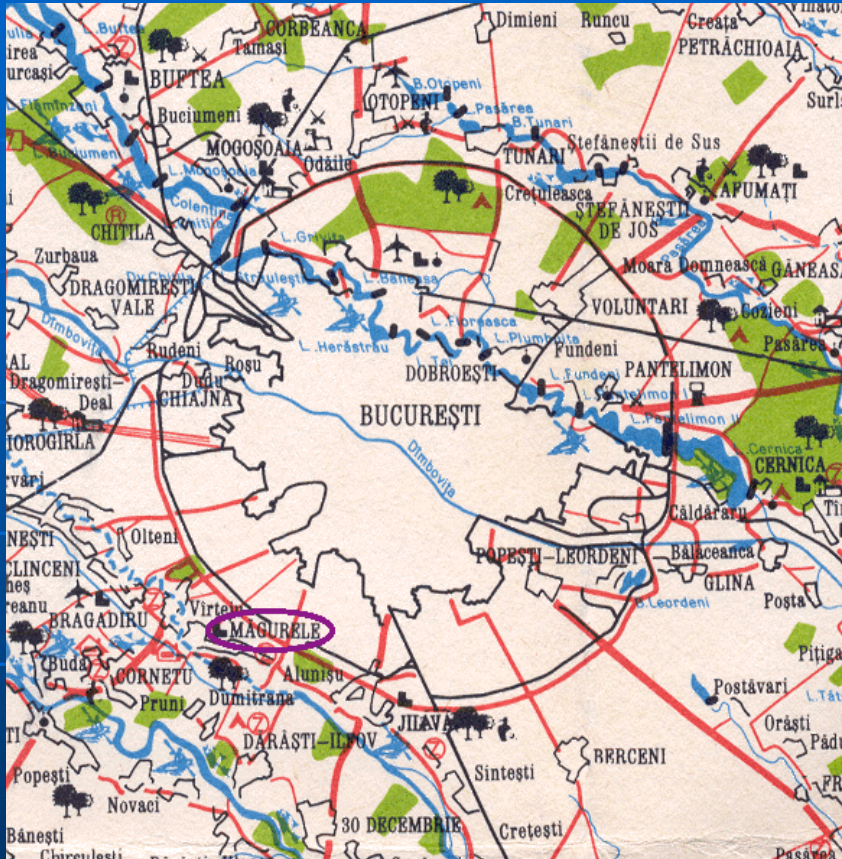


Ministry of Education and Research

# Horia Hulubei National Institute of R&D for Physics and Nuclear Engineering



# Location



Atomiștilor 407, Măgurele, Ilfov county, P.O. Box MG-6, 76900, Romania  
Phone: (4021) 4042300, Fax: (4021) 4574440, Web: <http://ifin.nipne.ro>

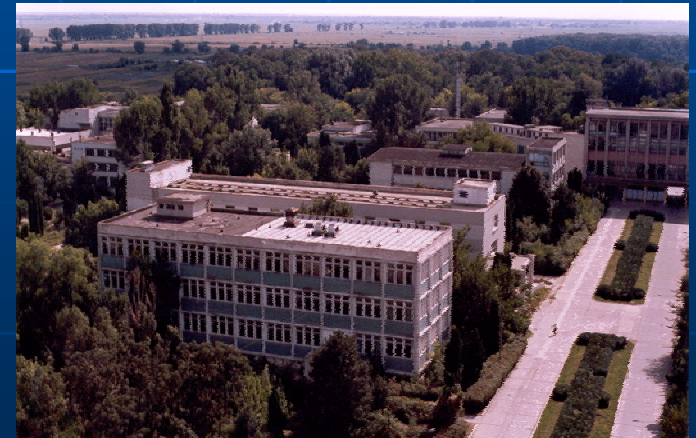


# IFIN-HH



Group 1

Group 2



# Brief history

- 1949: Institute of Physics of the Romanian Academy
- 1956: Institute of Atomic Physics (IFA)
- 1977: Central Institute of Physics (ICEFIZ)

—

IFIN (nuclear), IFTAR (lasers & plasma),  
IFTM (materials), CFPS (earth), IGSS  
(space).

- 1990: ICEFIZ became IFA

- 1996: IFIN-HH

# Basic & Applied Research

- Theoretical Physics:  
nuclei, fields & particles, condensed matter,  
nonlinear phenomena, mathematical &  
computational physics
- Nuclear Physics:  
structure & reaction mechanisms, hadronic  
matter, ion beam analysis, neutron  
diffraction, nuclear & atomic data, nuclear  
astrophysics; advanced detection systems
- Particle Physics:  
calorimetry, Monte Carlo simulations, object  
oriented  
software, statistical data analysis,  
phenomenology
- Life & Environmental Physics:

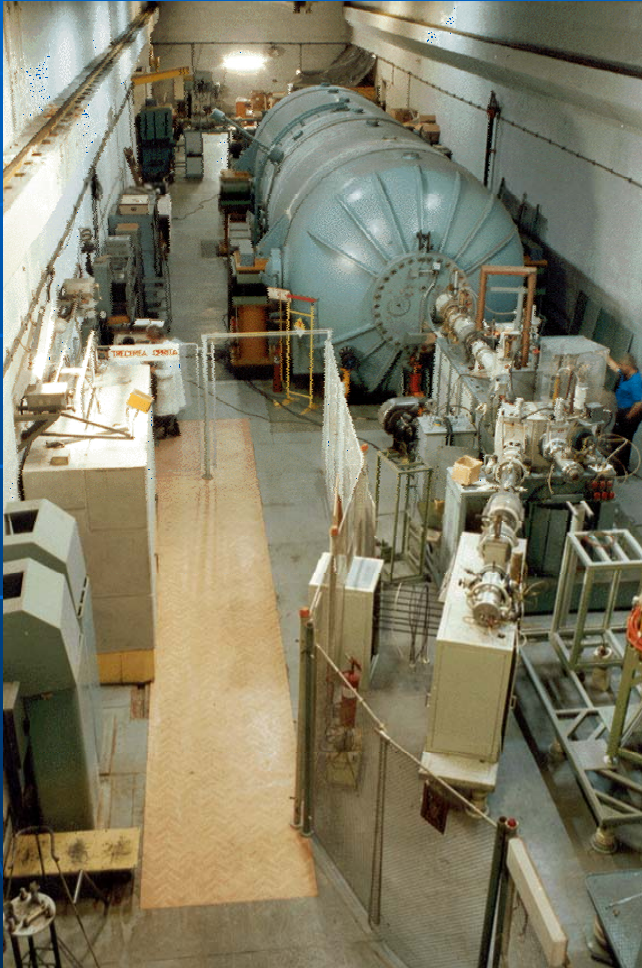
# Other activities

- Radioisotopes & Radiopharmaceuticals
- Technological Irradiations
- Radioactive Waste Treatment & Storage
- Decommissioning of Nuclear Facilities
- Nuclear engineering



# Large Scale Facilities

## Tandem Accelerator



## Cyclotron

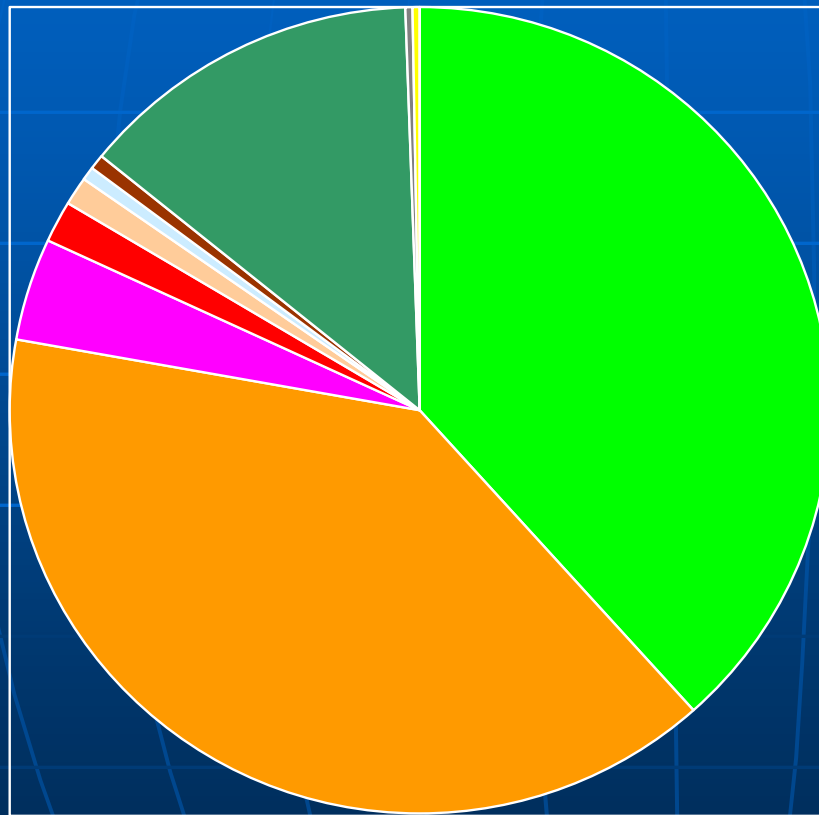


## Multipurpose $\gamma$ -Irradiator



# National R&D Programs

2005



CORE Fin.	26
CERES	69
RELANSIN	8
VIASAN	8
BIOTECH	6
MENER	4
AEROSP.	3
CORINT	4
AGRAL	3
GRANTS	4
INFRAS	4

projects



# Core Financing Program: NIFIN-1 (2003-2005)

## Objectives:

- Modeling of fundamental processes in quantum systems by analytical, computational, and experimental methods (4 projects)
- Basic researches in atomic and nuclear physics, developments and applications of accelerated beams (5 projects)
- Researches in life and environmental physics (3 projects)
- Enhancing the competence and competitiveness in applied physics: analysis, instrumentation, metrology (4 projects)
- Reinforcement of R&D directions with micro-production and services potential (4 projects)
- Studies on radioactive waste treatment and

# European R&D Programs

- FP 5: IDRANAP - Inter-Disciplinary Research and Applications based on Nuclear and Atomic Physics; RODOS – Real-time On-line DecisiOn Support Systems (off-site management of nuclear emergencies; 3 projects).
- FP 6: EURISOL, EURONS, IRA, CBM, NEWTOF, NORHA, SEE-GRID, EGEE. EURATOM: 5 projects.
- PHARE: Preliminary safety analysis for the low level radioactive waste repository Băița Bihor, Romania.
- IAEA: 4 projects.
- JRC: IRMM (reference materials), IHCP (health & consumer protection), IPSC (protection & security of the citizen), ITU (trans-Uranium), IES (environment & sustainability), IE (energy).

- Topics:**
- Determining Environmental Pollution (WP 1-4)
  - Nuclear Methods in Biology and Medicine (WP 5-6)
  - Radionuclide Metrology (WP 7)
  - Analysis and Characterization of Materials (WP 8-13)

**Home-made facilities:** Tandem and Accelerator Mass Spectrometer (WP 10),

High-Tech 3000 K Thermostat (WP 13), 14 GHz

ECR Ion Source, Rotatable WILLI Muon Detector  
Publications: 389 (2 books, 160 articles). International meetings of Cosmic Rays (WP 17).

**Mobility:** 84 guests from BE, DE, FR, GR, IT, NE, NO, SE, UK, HU, LT, PL, SK; 69 outgoing visits (Romanian scientists).

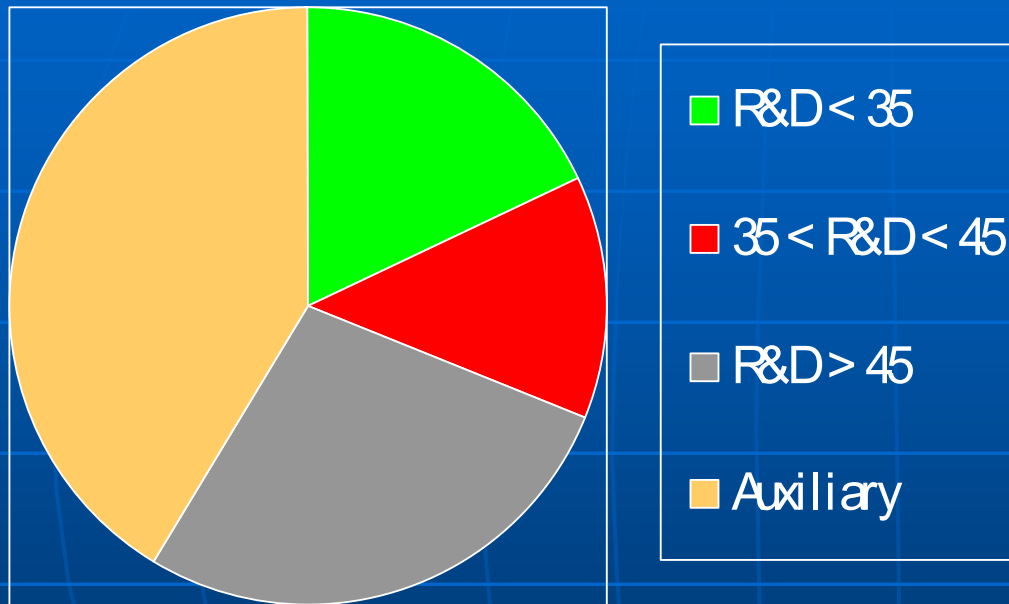
# International Collaborations

- **International organizations:**  
CERN-Geneva (3 LHC experiments), IAEA-Vienna (~20 projects 1985-2004), JINR-Dubna, JRC-Brussels, NATO.
- **Agreements:**  
ICTP-Trieste and INFN - Italy, IN2P3 and GANIL - France, DOE (Sandia and Argonne Nat. Lab.)- US.
- **Universities & Research Centers:**  
Europe (~50), US & Canada (~15), Asia (3).
- **Conferences:** over 40 (starting 1964).



# Personnel

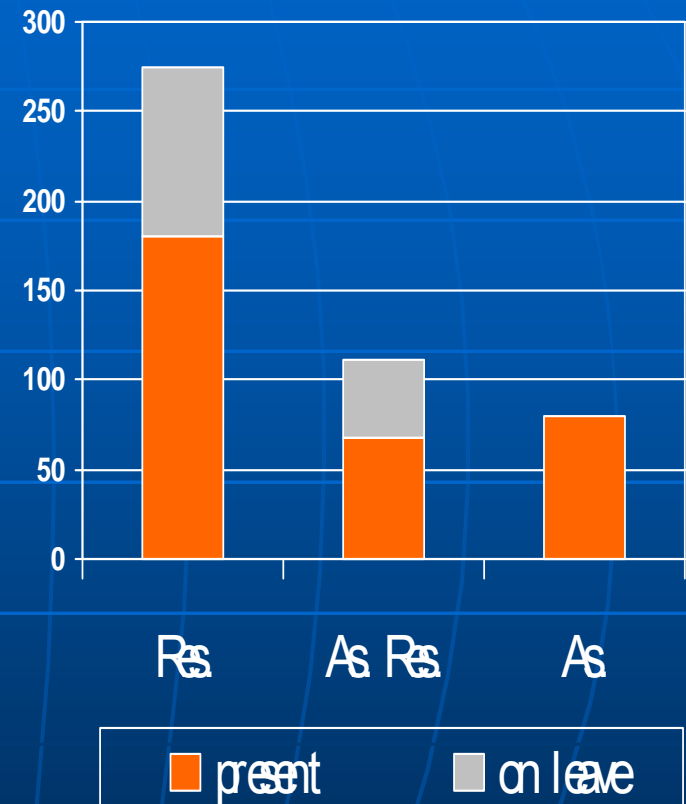
Total: 757



142 PhD / 46 students

35 teaching staff

R&D: 465



# Photo Gallery



May 2005

# Photo Gallery (cont.)



IFIN-HH ...

... your scientific partner